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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/695,612	10/24/2000	Joseph B. Richey II	INVA-Q-CIP-2	2971

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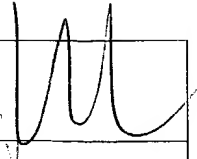
EXAMINER

FLYNN, AMANDA R

ART UNIT	PAPER NUMBER
3743	

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/695,612	<b>Applicant(s)</b> RICHEY ET AL.	
	<b>Examiner</b> Amanda R. Flynn	<b>Art Unit</b> 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2004.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) 11-19 and 25-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 20-24 and 28-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-38 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)<br>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)<br>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____.<br>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)<br>6) <input type="checkbox"/> Other: _____. |
|--|--|

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent Number 4,552,571 to Dechene in view of U.S. Patent Number 5,823,186 to Rossen.

Dechene discloses an apparatus for compressing and storing an oxygen-enriched gas, comprising: a concentrated oxygen source (from 22, 24) having oxygen-enriched gas therein, wherein said oxygen enriched gas contains at least about 50% oxygen by volume (as in applicant's own disclosure, type 5a and 13x zeolite is used, which is necessarily capable of producing a primary product gas of at least 50% oxygen by volume); a compressor (C) operatively connected to said oxygen source to receive the at least 50% oxygen by volume gas therefrom, said compressor being capable of compressing said oxygen-enriched gas to a high pressure; and a high-pressure storage container (46) for portable storage of said high-pressure oxygen-enriched gas. Dechene disclose a compressor (C) that compresses the oxygen-enriched gas to a high pressure, but Dechene does not specify that the compressor be the old and well-known compressor species known as a "radial compressor".

Rossen discloses that a teaching of "compressor" includes the use of radial compressors in the respiratory arts (See brief summary & claim 3). The references are analogous since they are from the same field of endeavor, the respiratory arts.

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At the time the instant application's invention was made, it would have been obvious to one of ordinary skill in the art to use a "radial compressor" with the device of Nishino because such a species of compressor is known to be within the scope of a teaching of a compressor in the respiratory arts. Therefore it would have been obvious to combine the references to obtain the instant application's claimed invention. Furthermore, such a feature is old and well known in the art, and one of skill in the art would consider such to amount to a matter of mere obvious and routine choice of design, rather than constitute a patently distinct inventive step, barring a convincing showing of evidence to the contrary.

3. Claims 2-4, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dechene and Rossen as applied to claim 1 above, and further in view of U.S. Patent Number 4,428,372 to Beysel et al.

In regards to claims 2-4, the suggested device substantially discloses the instant application's claimed invention, but does not explicitly disclose prioritization of feeding gas to the compressor versus the user based upon oxygen sensing.

Beysel et al. teach an oxygen enrichment apparatus that has a prioritized and switchable oxygen stream between a user (8) and a storage vessel (40), determined by the minimum required oxygen level for a user, detected by an oxygen sensor (60 & Col. 4, 1. 5). The references are analogous since they are from the same field of endeavor, the respiratory arts.

At the time the instant application's invention was made, it would have been obvious to one of ordinary skill in the art to have taken the features of Beysel et al. and used them with the suggested device. The suggestion/motivation for doing so would have been to insure a user is properly oxygenated. Therefore it would have been obvious to combine the references to obtain

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the instant application's claimed invention. Furthermore, such a feature is old and well known in the art, and one of skill in the art would consider such to amount to a matter of mere obvious and routine choice of design, rather than constitute a patently distinct inventive step, barring a convincing showing of evidence to the contrary.

In regards to claim 7-8, the suggested device is fully capable of enriching oxygen content by volume in the range of 85%.

4. Claims 5-6, 9-10, 20-24, 28-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dechene, Rossen and Beysel as applied to claims 3 and 4 above, and further in view of U.S. Patent Number 5,195,874 to Odagiri.

In regards to claims 5 and 6, the suggested device substantially discloses the instant application's claimed invention, but does not explicitly disclose use of sequentially smaller pistons for multi-stage gas compression.

Odagiri teaches a multistage gas compressor with a plurality of cylinders (23 and 24) which sequentially compress a gas (Column 4, lines 23-33) and where the sequential pistons have a smaller diameter (Note the different diameters of cylinders 29 & 30) which reciprocate within their respective cylinders with a crankcase (22) which would inherently contain the crankshaft to which the pistons would be attached by piston rods. While Odagiri does not show the pistons of the compressor it does illustrate pistons with both head and base portions and rods of the prior art and it does not teach away from the prior art on these elements. Dechene teaches the use of a compressor, of which Odagiri is an example, therefore one of ordinary skill in the art would at the time of the instant application's invention was made would consider it obvious to use the compressor of Odagiri with the disclosed device of the applied art to provide for the

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storage of enriched oxygen at a increased pressure. The references are analogous since they are from the same problem solving area, gas compression.

At the time the instant application's invention was made, it would have been obvious to one of ordinary skill in the art to have taken the features of Odagiri and used them with the suggested device. The suggestion/motivation for doing so would have been to optimize gas compression. Therefore it would have been obvious to combine the references to obtain the instant application's claimed invention. Furthermore, such a feature is old and well known in the art, and one of skill in the art would consider such to amount to a matter of mere obvious and routine choice of design, rather than constitute a patently distinct inventive step, barring a convincing showing of evidence to the contrary.

In regards to claim 9-10, the suggested device is fully capable of enriching oxygen content by volume in the range of 90%.

In regards to claim 28, the references noted above substantially disclose the claimed invention except for the placement of pistons in a non-adjacent circumferential position about a crankshaft. It is noted that applicant's specification does not set forth this placement as unexpectedly providing any new result or unexpectedly solving any new problem in the art over the prior art. Accordingly, the examiner considers the selection of such to be a mere obvious matter of design choice and as such does not patently distinguish the claims over the prior art, barring a convincing showing of evidence to the contrary.

In regards to claim 29, the references noted above substantially disclose the claimed invention except for the use of five piston/cylinder/rod sets. It is noted that applicant's specification does not set forth this number of piston/cylinder/rod sets, as unexpectedly

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providing any new result or unexpectedly solving any new problem in the art over the prior art. Accordingly, the examiner considers the selection of such to be a mere obvious matter of design choice and as such does not patently distinguish the claims over the prior art, barring a convincing showing of evidence to the contrary.

In regards to claim 30, the reference noted above substantially discloses the claimed invention except for the single throw functionality of the crankshaft/piston/rod assembly. It is noted that applicant's specification does not set forth this single throw functionality as unexpectedly providing any new result or unexpectedly solving any new problem in the art over the prior art. Accordingly, the examiner considers the selection of such to be a mere obvious matter of design choice and as such does not patently distinguish the claims over the prior art, barring a convincing showing of evidence to the contrary.

In regards to claim 31, the suggested device is fully capable of achieving a gas pressure in the range of 1500-3000 psi.

In regards to claim 32, the rejections to claims 28-30 are herein incorporated by reference against the limitations of claim 32.

In regard to claim 33, the references noted above substantially disclose the claimed invention except for the array of pistons based upon non-sequential arraying of the pistons for compression purposes. It is noted that applicant's specification does not set forth this non-sequential adjacent arraying of the pistons as unexpectedly providing any new result or unexpectedly solving any new problem in the art over the prior art. Accordingly, the examiner considers the selection of such to be a mere obvious matter of design choice and as such does not

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patently distinguish the claims over the prior art, barring a convincing showing of evidence to the contrary.

In regards to claim 34, the suggested device is fully capable of achieving a gas pressure in the range of 1500-3000 psi.

In regards to method claims 20-24 and 35-37, one of ordinary skill in the art would appreciate that the method steps claimed in the instant application would naturally flow from the device disclosed in the prior art as noted above and therefore are rejected herein above with respect to claims 1-10 and 28-34.

### ***Double Patenting***

5. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993)\*, *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985), *In re Van Ornumt* 686 F.2d 937, 214 USPQ 761 (CCPA 1982), *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970)', and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321\* may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b). Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).



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6. Claims 1-10, 20-24 and 28-37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-26 of U.S. Patent Number 5,988,165 in view of Rossen.

Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim a portable oxygen enrichment apparatus with a high pressure storage container for portable storage of high pressure oxygen enriched gas, a concentrated oxygen source wherein said oxygen enriched gas contains at least 50% oxygen and a compressor, but does not teach the use of the old and well known compressor species known as a "radial compressor".

Rossen discloses that a teaching of "compressor" includes the use of radial compressors in the respiratory arts (See brief summary & claim 3). The references are analogous since they are from the same field of endeavor, the respiratory arts.

At the time the instant application's invention was made, it would have been obvious to one of ordinary skill in the art to use a "radial compressor" with the device because such a species of compressor is known to be within the scope of a teaching of a compressor in the respiratory arts. Therefore it would have been obvious to combine the references to obtain the instant application's claimed invention. Furthermore, such a feature is old and well known in the art, and one of skill in the art would consider such to amount to a matter of mere obvious and routine choice of design, rather than constitute a patently distinct inventive step, barring a convincing showing of evidence to the contrary.

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***Response to Arguments***

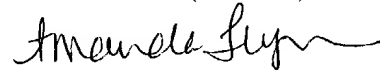
7. Applicant's arguments, see pages 10-11, filed 09 July 2004, with respect to the rejection(s) of claim(s) 1-38 based on the Nishino reference have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Dechene.

***Conclusion***

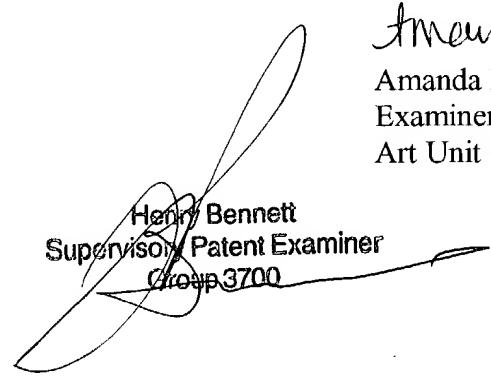
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amanda R. Flynn whose telephone number is 703-306-4056. The examiner can normally be reached on Monday-Thursday, 8:30 - 6:00 and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry A. Bennett can be reached on 703-308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Amanda R. Flynn  
Examiner  
Art Unit 3743



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